

CURRENT LITERATURE.

BOOK REVIEWS.

Pennsylvania forestry.¹

IN these two volumes Dr. Rothrock, the efficient forestry commissioner of Pennsylvania, has embodied what may be considered almost a model method of popular education on a little known subject. Notwithstanding the immense amount of money realized from lumbering in Pennsylvania, and despite the fact that the visible supply of raw material is but a moiety of what was considered an inexhaustible forest less than fifty years ago, the popular apathy regarding forest resources is almost as great in Pennsylvania as in the northwestern states. And yet it must be said that, while other states preceded her in formulating forestry legislation, Pennsylvania has approached the subject in a more business-like way, and is already in the front rank in the protection of forest interests.

The report of 1895 embodies the work of a forestry commission appointed by act of legislature approved May 25, 1893. This commission consisted of a botanist (Dr. J. T. Rothrock) and an engineer (Mr. William F. Shunk), the latter confining his work to the watersheds of the state, and the influence of forests on stream-flow. Dr. Rothrock is responsible for much the greater part of the volume, and it would be difficult to have planned a report better calculated to stimulate popular interest in a failing resource, and to arouse public opinion to the necessity of strong legislative measures for its protection.

It is to be regretted that a book so admirable in its plan should be faulty in its statistics, but this may be pardoned in view of the brief time at the disposal of the commission. It appears that 36.29 per cent of the state area is in timber, but no indication is given of the value of this woodland, which embraces both productive forest and what is practically waste land. Forest fires and the relation of forest to water supply are discussed, and an estimate is given by counties of forest area and conditions. Much the greater part of the report is devoted to notes of a non-technical character on the commercial forest species of the state.

The illustrations are especially noteworthy, and with their graphic titles tell in themselves the story of the evil effects of forest fires and the wasteful extravagance of present methods of logging. It should be remembered that

¹ Annual Report of the Division of Forestry, Department of Agriculture, State of Pennsylvania, for 1895, and for 1896. Harrisburg.
1898]

Dr. Rothrock has not attempted a technical discussion of the forestry problem; his evident aim is to educate the people to an appreciation of the importance and value of the forests, a purpose the report is well calculated to serve.

The second volume is a modest pamphlet of fifty-five pages, but to the teacher of forest botany, and the student of legislation for forest protection it is the more notable utterance of the two. In addition to a preliminary report as forestry commissioner, there is a popular essay on the relation of forests to the farmer and an excellent article on the removal of the fertile soil from the farm by water, both of which contain interesting material for teachers. A black walnut freak, producing fruit, the epicarp of which resembles that of the hickory nut, is described and figured, as is also a weed (*Echium vulgare*) new to the state.

In his report Dr. Rothrock discusses a practical method of securing reliable data of the various classes of timber land in the state—information not heretofore available—taxes on forest land, forest reservations, forest fire legislation, and forests and floods. The report, though brief, is by far the best presentation of forestry needs that has yet appeared, and should have wide publicity.—CHARLES A. KEFFER.

The physiology of plants.

IT HAS BEEN known for some time that Professor Dr. Pfeffer had in preparation a new edition of his treatise on plant physiology. The first volume of this second completely rewritten edition has recently appeared.² How completely it has been rewritten appears at once when the 383 pages of the first volume of the first edition are set over against the 620 pages of the same part of the second edition. Since the first edition has occupied so important a position in the literature of plant physiology, it is to be expected that this much more extended one will rightfully maintain the place its predecessor won.

The volume before us is devoted to the discussion of the movements and transformations of matter (*Stoffwechsel*); the second, which is in preparation, is to discuss the transformations of energy (*Kraftwechsel*). After a few introductory chapters, the following are the main headings: Die Mechanik des Stoffaustausches; die Mechanik des Gasaustausches; die Wasserbewegung in der Pflanze; die Nährstoffe der Pflanze; Bau und Betriebsstoffwechsel; Athmung und Gährung; Stoffwanderung. Although so greatly extended, it will be observed that the same general mode of treatment has been retained. While details have been much altered, the fundamental outlines remain the same.

What one feels most strongly in going through the book is that the author

² PFEFFER, W., Pflanzenphysiologie, ein Handbuch der Lehre vom Stoffwechsel und Kraftwechsel in der Pflanze. Zweite völlig umgearbeitete Auflage. Erster Band: Stoffwechsel. 8vo., pp. x + 620, figs. 70. Leipzig: Wilhelm Engelmann. 1897. M 20. (Bound, M 23).